

Title (en)
INJECTION VALVE FOR INTERNAL COMBUSTION ENGINES

Publication
EP 0262197 B1 19900606 (DE)

Application
EP 87902302 A 19870408

Priority
AT 98886 A 19860415

Abstract (en)
[origin: WO8706308A1] Injection valve for internal combustion engines, provided with a nozzle body (10) with injection holes (11, 12) for the fuel and two coaxial spring-loaded valve needles co-operating with separate injection holes. The external hollow needle (7) has radial bores (14) and the inner valve needle is designed as a control piston (13) of which the jacket, in the region of the openings of the radial bores (14) of the hollow needle (7), has control edges formed of an annular recess (15). Leading from the recess in the jacket of the control piston (13) are ducts, or preferably an axial bore (19), which extend to a seating (20), arranged on the control piston (13), of a valve-closing element (21) which co-operates with the control piston, such as for example a tapered element or ball. After a pre-determined travel of the control piston (13) the recess (15) forming the control edges causes a pressure drop and closure of the relevant injection holes (12), as a result of which a separation is achieved between the pre-injection and the main injection initiated by the raising of the hollow needle (7).

IPC 1-7
F02M 45/08

IPC 8 full level
F02M 45/08 (2006.01)

CPC (source: EP)
F02M 45/086 (2013.01); **F02M 2200/46** (2013.01)

Citation (examination)
DE 2710216 A1 19780914 - BOSCH GMBH ROBERT

Cited by
CN108064322A; EP2204570A1; DE102019103511A1; CN113423945A; WO2016118012A3; EP3247896B1

Designated contracting state (EPC)
AT DE FR GB

DOCDB simple family (publication)
WO 8706308 A1 19871022; AT E53436 T1 19900615; EP 0262197 A1 19880406; EP 0262197 B1 19900606

DOCDB simple family (application)
AT 8700024 W 19870408; AT 87902302 T 19870408; EP 87902302 A 19870408